To appraise the quality of the translations, a panel of language professors and bilingual marketing experts were consulted. The panel selectively analyzed translations in their language of expertise. In general, they agreed that the overall translation quality is good. Exceptions were noted for translations that were "too" literal ("transliterations" over decentered, conceptual equivalents), nonconcurrence with gender choice for some nouns, inconsistencies with the endings for adjectival nouns, and a few misspellings.

An interesting feature of the glossary is that, in some cases, the English term is given as the "translation" because it is used frequently in the foreign language. For example, the term "marketing" is used in the five other languages along with other choices, but the English term has a more extensive meaning than the translations. Synonyms are given when applicable, but without clarification of usage.

This book appears to be unique in terms of the number of languages included and the specialization on marketing research. Other marketing glossaries are only bilingual (Lleu 1983, English-French; Fisher-Rossi 1979, Spanish-English) or specialize only in advertising terms (Koschnick 1987, English-German).

The glossary is a solid contribution that should help marketing research practitioners and users around the world understand each other better. It should be considered a useful reference for language translations and a "should have" addition to international business libraries.

HUMBERTO VALENCIA

American Graduate School of International Management (Thunderbird)

PATRIYA TANSUHAJ
MICHELLE MCCANN

Washington State University

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CONJOINT LINMAP. New York: Bretton-Clark, 1989.

CONJOINT LINMAP is Bretton-Clark's latest addition to its suite of programs for use in conjoint analysis projects, joining CONJOINT DESIGNER (Carmone 1986), CONJOINT ANALYZER (Green 1987), SIMGRAF, and BRIDGER (Albaum 1989). It is a menu-driven personal computer version of the mainframe program LINMAP IV, a nonmetric optimization technique for analysis of conjoint and other types of data developed by Srinivasan and Shocker (1973a,b). Unlike Bretton-Clark's CONJOINT ANALYZER and Sawtooth Software's ACA System (Carmone 1987)—the other major conjoint programs—CONJOINT LINMAP can be used to analyze data from either full-profile or tradeoff studies.

The package is shipped on one disk (the application program, sample datafiles, and two utility programs) with a detailed user's manual. This version of LINMAP includes enhancements for simulation, validation, data cleaning, and other features. However, some of the flexibility of the original mainframe version is limited—nonconjoint applications are not possible and a few options that are user-specified in LINMAP IV are preset in the PC version. Bretton-Clark believes this is an advantage as the options chosen are "near-optimal" for most applications, whereas user specification could lead to inappropriate choice of options; we say more on this design decision subsequently.

Installation

Installation of CONJOINT LINMAP from the floppy onto a hard disk is straightforward. The program works also from the floppy drive alone. However, the user must insert a programmable hardware key that is provided with the software into the parallel printer port in order to run the program. This key is used to ensure that the program can be run on only one machine at a time. The program itself is not copy protected and backup copies can be made. The printer is always available for use as it is plugged into the key. To some users, such a key will be an inconvenience and perhaps even an annoyance, but it appears to be a necessary feature if unauthorized copying of software is to be minimized.

CONJOINT LINMAP needs no special equipment other than the key provided with the program disk. The software runs on IBM and compatible PCs with at least 256K of memory, though 640K is highly recommended. The program supports an XXX87 math coprocessor, but will run without one. As we show, the math coprocessor is almost a necessity unless the researcher is in no hurry. The linear programming technique used in calculating utilities takes a great amount of computation time. The program requires DOS 2.0 or higher, and either a color or monochrome monitor can be used. An unlimited number of product features and cards can be handled.

Estimating Utility Functions

The initial menu lets the user select from among the following options.

1. New analysis
2. Retrieve previous analysis
3. Run simulations
4. Screen/clean data
5. Analyze holdout data
6. Calculate group utility function
7. Exit

CONJOINT LINMAP requires a design file and a datafile as input. The datafile contains either full-profile or tradeoff table data and the design file contains either card

or table specifications. A full-profile design file created by CONJOINT DESIGNER can be read without modification. The program is flexible enough to be used with any full-profile design file written as an ASCII file, if it follows the structure shown in the Appendix to the user's manual. This structure may be necessary if interaction terms are to be estimated and a non-CONJOINT DESIGNER design file is to be used. Tradeoff design files also must be in ASCII format and structured as specified in the manual.

CONJOINT LINMAP is fairly flexible in how input datafiles can be structured. ASCII files must be used and structured as shown in the manual. One acceptable version for full-profile data is the basic form supported by Version 2 of CONJOINT ANALYZER.

Assuming a new analysis, the program requests the various file names and type of data (full profile or tradeoff tables). The user then is asked whether the data are weighted. This is a useful option, especially for applications in forecasting from "nonrepresentative" samples. For each feature, the user indicates whether it is qualitative (part-worth model) or quantitative (ideal point or vector model). For quantitative features, values must be entered for each level of the feature. Any errors can be corrected after all features have been specified as there is an option to review what has just been entered.

The next step is to specify the constraints for selected features. This is one of the capabilities of CONJOINT LINMAP that differentiates it from CONJOINT ANALYZER and the ACA System. That is, one sets constraints prior to calculating individual utilities instead of first calculating the utilities and then forcing monotonicity as is done in other conjoint software. The user can automatically force the individual's utilities to be at least weakly monotone on features that, *a priori*, are assumed to be monotone. To use this capability, the levels for the part-worth model features must be in a specific order. If they are not, a utility program is included to rearrange the levels. If an ideal point model is being used, additional constraints on shape of curve (concave, convex, unknown) can be specified. Finally, for vector models, the only constraint possible is whether it is increasing or decreasing.

After specifying the form of the input data (rating or rankings, card numbers included, etc.), one calculates the utilities for each individual for each feature level. These utilities are stored in a file that can be used for further analysis by CONJOINT LINMAP or other software (e.g., SIMGRAF and BRIDGER).

Data Cleaning

Once the utilities have been calculated, one can see how well the predicted values fit the actual data. This is done by looking at pairs of stimuli and matching the predicted preferences with actual preferences. A table of violations is presented that shows the distribution over the group of respondents of the percentage of pairs violated. This is the goodness-of-fit measure used in CONJOINT LINMAP and is included for each individual in the utility file for further use as a screening variable. One can view individual respondent data and, on the basis of a user-specified threshold value, delete respondents with poor fit (i.e., at or above threshold violations).

Group Statistics, Holdout Data Calculations, and Simulations

Once the data are "cleaned," the user can calculate average utilities for the sample, evaluate holdout cards or tables, and run simulations. These steps are done by simply requesting the appropriate option from the main menu, specifying the names of the files, defining the products to be simulated, and so on. These steps are straightforward in this package. For simulations, up to 30 products can be analyzed at a time by using a first choice or maximum utility model.

SAMPLE RUNS

Included with CONJOINT LINMAP are two sample design files and datafiles, one each for full-profile and tradeoff table tasks. The manual is well written and easy to follow, so we were able to run the sample data with no problems. We used a Compaq Plus with a 386 chip and math coprocessor and a Toshiba 3100 with only a 286 chip (Norton Computing Index of 16.5 and 8.3, respectively) to run the sample with full-profile data. The computing time per respondent was .45 minutes for the Compaq and 12 minutes for the Toshiba. With a large number of respondents and only a 286-based machine, one could run the analysis overnight. The tradeoff sample data were run on a UNISYS with a 386 chip, but no coprocessor, and a Zenith Supersport with an 8088 chip and a math coprocessor. The compute time per respondent was .50 minutes for the UNISYS and 5 minutes for the Zenith.

We conclude from the sample runs that it is best to have a 386 chip or at least a math coprocessor with any machine. Ideally, one should have both to run CONJOINT LINMAP in a "reasonable" amount of time. After we calculated the individual utilities, it was very easy to calculate group statistics and run a few simulations. Even the naïve user should have little difficulty in using CONJOINT LINMAP with his or her own data, as long as the input files are in proper format.

Summary

A general question is whether the significantly long time needed to run a nonmetric algorithm with constraints is worth the effort. Carmone, Green, and Jain (1978), Jain et al. (1979), and Wittink and Cattin (1981) have found ordinary least squares (OLS) procedures to be about as good as the nonmetric procedures under many conditions.

The researcher must ask whether or not his or her data can be analyzed best by using a nonmetric procedure;

many researchers feel a nonmetric algorithm is more intuitively satisfying than a simple OLS model. Any researcher who is so persuaded would have no difficulty in using CONJOINT LINMAP. Its major weakness is derived from the algorithm, not the software—to run a sample of reasonable size would require a powerful computer.

One other item of concern is the "fixing" of parameter values by the program. We believe it would have been better to leave as much to user choice as technically and practically feasible, rather than making decisions for the user. The "optimal" parameter values could have been set as default values for the naïve user. Perhaps subsequent versions will have this flexibility.

Finally, users of CONJOINT LINMAP will find the manual easy to use and full of helpful hints (e.g., the discussion of price elasticity and segmentation). Even the experienced conjoint analysis researcher will find the material helpful.

In summary, researchers who find the nonmetric optimization techniques appealing probably would be willing to accept increased computing time for a "better" algorithm. CONJOINT LINMAP would certainly be the software of choice.

GERALD ALBAUM
University of Oregon
FRANK J. CARMONE
Drexel University

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ALDUS PAGEMAKER 3.02. Seattle, WA: Aldus.

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QUESTIONNAIRE DESIGN WITH DESKTOP PUBLISHING SOFTWARE FOR THE APPLE MACINTOSH PC

The four software programs reviewed are representative of desktop publishing software packages for the Apple Macintosh PC. The review compares the software programs in general and also in the particular context of survey questionnaire design with desktop publishing software.

The reader must be forewarned that even though the ease of use of Macintosh software has been a hallmark for Apple, desktop publishing software requires a higher order of diligence to master. The reason is that desktop publishing is an unfamiliar discipline for most academicians. Besides mastering a new vocabulary, the user must master commands that are not as intuitive as those in many Mac software applications. Nonetheless, we believe the time invested in mastering the software will be well rewarded with time savings in the designing of questionnaires alone.

Desktop Publishing

Before reviewing the software, we must define desktop publishing. The simplest definition is that desktop publishing is the ability of software to create documents in virtually any format desired by the user. The user, in essence, is able to create a multitude of formats, depending on his or her needs, by controlling the text, graphics, and creation of the visual layout of the information before publishing, at a micro level. This ability minimizes one's dependence on outside resources who are "experts" in such matters. One thing the software cannot do for the user is supply creativity in undertaking the layout and related activities. The software allows for creativity to take place readily, but it must be supplied by the user.

RagTime 3.0

RagTime recommends that the user have two disk drives, one of which must be a hard disk. The software will operate on most Macintosh configurations, provides basic color support, is HFS compatible, and is not copy protected. The software comes packaged in a vinyl container with about a 350-page manual that includes a five-lesson tutorial, five glossaries, and two 800K formated disks containing the program. The program is available in several foreign languages.

The newest version, 3.0, has many improvements, ranging from a cleaned-up user interface to expanded color capabilities. This version will do color separations, mail merge, macros, and font sizes up to 999 pts., as well as having 90-degree rotation capability and improved file importation capabilities. Additional printing options are